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Navin Chaddha, Gerard A.Wall, and Brian Schmidt. *An End to End Software Only Scalable Video Delivery System.* In Proceedings of the Workshop an Network and Operating Systems for Digital Audio and Video (NOSSDAV 95), 1995.

This paper is cited in the following contexts:

Multi-Platform Simulation of Video Playout Performance - Gharai, Gerber (1998) (Correct)

....a video is first downloaded from the server in entirety; then during playback the stream is converted to a local form, by separately segregating all P frames and I frames. **In** this manner, a rough backward playback is simply a matter of displaying a series of I frames. **The system described in [1] scales not only the rate, but also the spatial resolution of a video stream.** This is done by packaging three versions of every frame, with each offering a monotonic improvement over the previous one. **The** first is a 160x120 abstraction of the original picture; the next is the residue term which, ...

....component. **We summarize the two methods here: Pure stochastic variable: In this case the time sample list is sorted as a histogram divided into either 10 3 or 10 4 buckets (depending on the range and variation of the recorded process) Then, the histogram is normalized to the interval [0, 1], which yields a (synthesized) discrete probability distribution function (or pdf) f(t) for the variable, where we now assume that a given outcome is made as a simple Bernoulli decision.** i.e. f(t) returns the probability of a sample time t being realized during playback on the device. **Next**, f s ....

[Article contains additional citation context not shown here]

Navin Chaddha, Gerard A.Wall, and Brian Schmidt. *An End to End Software Only Scalable Video Delivery System.* In Proceedings of the Workshop an Network and Operating Systems for Digital Audio and Video (NOSSDAV 95), 1995.

Experiments with Digital Video Playback - Gerber, Gharai (1995) (2 citations) (Correct)

....One approach to this problem is for the client to adaptively scale the playback rate by deterministically dropping some of its frames. **This** is the approach taken in the the Nemesis [5] project, which uses a predictive prefetch algorithm to scale a client s input streams. **The system described in [1] scales not only the rate, but also the spatial resolution of a video stream.** This is done by packaging three version of every frame, with each offering a monotonic improvement over the previous one. **At** any point in the process the codec can stop improving the current frame, and proceed to the ....

Navin Chaddha, Gerard A.Wall, and Brian Schmidt. *An End to End Software Only Scalable Video Delivery System.* In Proceedings of the Workshop on Network and Operating Systems for Digital Audio and Video (NOSSDAV 95), 1995.

Experiments with Digital Video Playback - Gerber, Gharai (1995) (2 citations) (Correct)

....exclusive reliance on the JPEG codec thus, the prefetch algorithm assumes that any frame may either be retrieved or dropped. **This** type of rate based scaling is significantly more complicated when applied to codecs with inter frame dependencies, such as Cinepak, MPEG, etc. **The system described in [1] scales not only the rate, but also the spatial resolution of a video stream.** This is done by packaging three versions of every frame, with each offering a monotonic improvement over the previous one. **The** first is a 160x120 abstraction of the original picture; the next is the residue term which, ...

Navin Chaddha, Gerard A.Wall, and Brian Schmidt. *An End to End Software Only Scalable Video Delivery System.* In Pr'oceedings of the Wor'kshop on Networ'k and Oper'ating Systems for' Digital Audio and Video (NOSSDAV 95, 1995.

Adaptation Techniques for Ubiquitous Internet Multimedia - Margaritidis, Polyzos (2001) (Correct)

....video traffic to a maximum of 128 Kb s 512 Kb s, in order to prevent network congestion. **Timing** requirements on the other hand can be more relaxed for video. **It was shown that small variations in interarrival delay between frames do not affect the perceptual quality of the stream s presentation [13, 14, 15, 16].** The same happens with fairly small error rates, especially when they follow a uniformly random pattern. **In** this case, bit errors are spread throughout each frame and result in barely noticeable erroneous or missing spots that do not alter the perceptual value of the scene. **However**, if the error ....

....of each link that the stream crossed during the transmission. **The encoder utilizes the highest error rate in order to alter the stream s signal to noise ratio (SNR) This effectively makes the stream more or less robust to errors, while increasing or decreasing the consumed bandwidth, respectively [13, 28, 29, 30, 36, 66].** Except from adapting the data rate, video streams allow multi dimensional adaptation by adjusting most of the encoding parameters. **A** filter applied to a video stream in order to change its presentation characteristics is a solution frequently encountered in the literature [41, 48, 49] The ....

Chaddha N, Wall GA, Schmidt B. *An End-to-End Software Only Scalable Video Delivery System.* Proceedings of the 5 th NOSSDAV 1995; 139-150.

A Proxy-based Framework for Reliable Multicast in Heterogeneous.. - Chawathe (Correct)

.... **1600x1200 24 bit true color Memory Capacity 2 MB physical 128 MB physical 64 KB address space 4 GB address space Network Bandwidth 28.8 modem connection 100 Mb s Ethernet Network Latency 200 400 ms wireless [2] 1 ms ethernet Table 1: End client and Network Heterogeneity on layered media [50, 41, 10, 38] or proxy based transcoding embedded within the network [55, 5] In the former approach, a source encodes its signal in a layered representation and stripes these layers across multiple multicast groups.** In turn, receivers individually tune their reception rates by adjusting the number of groups ....

....any loss, the protocol adapter uses lossless compression. **An even better form of dynamic data adaptation involves the use of progressive data formats such as progressive JPEG [58] or any of a multitude of research codecs based on sub band transforms [47, 51] or hierarchical vector quantization [10]) with such formats, the adapter initially generates a low quality image for the client and gradually lls in higher quality information in the background.** The protocol adapter uses specialized transformation engines to perform these conversions. **These** engines can often be built from ....

[Article contains additional citation context not shown here]

Chaddha, N., Wall, G. A., and Schmidt, B. *An End to End Software Only Scalable Video Delivery System.* In Proceedings of the Fifth International Workshop on Network and OS Support for Digital Audio and Video (Durham, NH, Apr. 1995), Association for Computing Machinery.

Robust Internet Video Transmission Based on Scalable.. - Horn, Stuhlmüller.. (1999) (39 citations) (Correct)

....perfectly suited to improve the picture quality in video on demand and multicast applications where the overall end to end delay is less critical than for applications like video telephony. **Scalable video coders especially for Internet applications have been proposed in the past by many authors [4, 5, 6, 7, 8, 9, 10, 11].** The idea of combining scalable coding with unequal error protection has already been proven to result in gracefully degrading transmission schemes [12] Applying forward error correction across video data packets has previously been proposed in the PET system [13, 14] for MPEG 1 Internet video ....

N. Chadda, G. Wall, and B. Schmidt. *An end-to-end software-only scalable video delivery*

RMX: Reliable Multicast for Heterogeneous Networks - Chawathe, McCanne, Brewer (2000) (78 citations) (Correct)

....data from across the network. 34] presents a generic framework for Internet proxy services. **In** the context of multicast, 35] is a proxy framework for real time audio video data. **Content layering is another scheme that has been widely used to tackle heterogeneity in multicast environments [36] [37], 38] Layering typically involves encoding the source data into multiple layers; the base layer provides an approximate representation of the original data, and each additional layer provides more information about the original data.** Rizzo et al. 39] describe a Reliable Multicast data ....

Navin Chaddha, Gerard A. Wall, and Brian Schmidt, "*An End to End Software Only Scalable Video Delivery System*," in Proceedings of the Fifth International Workshop on Network and OS Support for Digital Audio and Video, Durham, NH, Apr. 1995, Association for Computing Machinery.

Scalable Video Transmission for the Internet - Horn, Girod (1997) (3 citations) (Correct)

....disk space. **As** explained later certain precautions are needed to allow switching between different bit rates during a transmission. **Scalable** video coding has been proposed to address the problem of transmitting video over an unknown channel. **Besides transmission over heterogeneous networks [2, 3, 4] digital TV broadcasting is another example where scalability can achieve graceful degradation of the picture quality depending on the available bandwidth for error free data transmission [5] A scalable video coder produces a bit stream, decodable at different bit rates.** It allows computation ....

N. Chadda, G. Wall, and B. Schmidt. *An endto -end software-only scalable video delivery system.* In Proc. NOSSDAV'95, Apr. 1995.

Multi-Platform Simulation of Video Playout Performance - Ladan Gharai (1998) (Correct)

....a video is first downloaded from the server in entirety; then during playback the stream is converted to a local form, by separately segregating all P frames and I frames. **In** this manner, a rough backward playback is simply a matter of displaying a series of I frames. **The system described in [1] scales not only the rate, but also the spatial resolution of a video stream.** This is done by packaging three versions of every frame, with each offering a monotonic improvement over the previous one. **The** first is a 160x120 abstraction of the original picture; the next is the residue term which, ...

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A Proxy Architecture for Reliable Multicast in.. - Chawathe, Fink.. (1998) (20 citations) (Correct)

....of a heterogeneous set of receivers. **A number of promising works have addressed the problem of multicast heterogeneity in the particular case of realtime audio video data, and each of these solutions generally falls into one of two categories: end to end adaptation based on layered media [40, 36, 10, 32] or proxy based transcoding embedded within the network [44, 5] In the former approach, a source encodes its signal in a layered representation and stripes these layers across multiple multicast groups.** In turn, receivers individually tune their reception rates by adjusting the number of groups ....

....loss, the protocol adapter uses lossless compression. **An even better form of dynamic data adaptation involves the use of progres sive data formats such as progressive JPEG [47] or any of a multitude of research codecs based on sub band transforms [37, 41] or hierarchical vector quantization [10]) with such formats, the adapter initially generates a low quality image for the client and gradually fills in higher quality information in the background.** The protocol adapter uses specialized transformation engines to perform these conversions. **These** engines can often be built from ....

Chaddha, N., Wall, G. A., and Schmidt, B. *An End to End Software Only Scalable Video Delivery System.* In Proceedings of the Fifth International Workshop on Network and OS Support for Digital Audio and Video (Durham, NH, Apr. 1995), Association for Computing Machinery.

Experiments with Digital Video Playback - Richard Gerber (1995) (2 citations) (Correct)

....reliance on the JPEG codec thus, the prefetch algorithm assumes that any frame may either be retrieved or dropped. **This** type of rate based scaling is significantly more complicated when applied to codecs with inter frame dependencies, such as Cinepak, MPEG, etc. **The system described in [1] scales not only the rate, but also the spatial resolution of a video stream.** This is done by packaging three versions of every frame, with each offering a monotonic improvement over the previous one. **The** first is a 160x120 abstraction of the original picture; the next is the residue term which, ...

Navin Chaddha, Gerard A.Wall, and Brian Schmidt. *An End to End Software Only Scalable Video Delivery*

System. In Proceedings of the Workshop on Network and Operating Systems for Digital Audio and Video (NOSSDAV 95), 1995.

Quality of Service Specification for Resource Management in.. - Staehli (1996) (5 citations) (Correct)

.... **that an adaptive algorithm can achieve better perceived quality of MPEG video playback by intelligently 7 choosing the pattern of dropped frames at the source [13] Others have shown that video resolution and picture quality can be varied dynamically to save bandwidth without dropping frames [21, 14].** As with a guarantee approach, adaptive algorithm designers are forced to make ad hoc choices regarding which aspect of presentation quality to sacrifice because of the lack of a complete specification of QOS requirements. **To** date, researchers have found that presentation level QOS requirements ....

....results are described in Section 2.2.6. **Data** layout is further complicated by applications that read only a portion of a continuous media stream, e.g. only the low frequency components of a compressed video. **One approach is to split a single media stream into base layer and enhancement layers [14].** For low resolution access, an application need only read the base layer stream. **For** best resolution, an application must read the base layer and enhancement layer streams and 26 sector data transfers seeks time Figure 2.9: Interleaved disk scheduling for two streams. **combine** them. **Disk** ....

[Article contains additional citation context not shown here]

Chaddha, N., Wall, G. A., and Schmidt, B. *An end to end software only scalable video delivery system*. In NOSSDAV 95 (April 1995), vol. 1018 of Lecture Notes in Computer Science, Springer-Verlag, pp. 139--150.

Scalable Compression and Transmission of Internet Multicast Video - McCanne (1996) (61 citations) (Correct)

....because the refinement bands are equivalently obtained by convolving the original image with an appropriately scaled Laplacian weighting function. **The** Laplacian pyramid was a break through innovation that led to a number of image and video coding schemes. **One example is Chaddha et al. s scheme [26, 24] based on a Laplacian pyramid and treestructured vector quantization [67] of the refinement bands.** Both the vector codebook construction algorithm and vector searches during the encoding process are computationally expensive, but the decoder algorithm can be carried out efficiently almost ....

Navin Chaddha, Gerard A. Wall, and Brian Schmidt. *An end to end software only scalable video delivery system*. In Proceedings of the Fifth International Workshop on Network and OS Support for Digital Audio and Video, Durham, NH, April 1995. ACM. 161

Experiments with Digital Video Playback - Gerber, Gharai (1995) (2 citations) (Correct)

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Scalable Multimedia Communication with Internet Multicast.. - McCanne (1998) (20 citations) (Correct)

....like coding syntax. **For** instance, payload format specifications define how H.261, Motion JPEG, and MPEG bit streams are framed in RTP packet streams. **Finally, a payload format may be further decomposed into a hierarchy, e.g. as indicated in layered video formats like PVH [73] LDCT [6] and HVQ [107, 16].** The refinement of these experimental layered video formats into Internet standards is an active area of research and is currently under development. **A** key goal in RTP is to provide a very thin transport layer without overly restricting the application designer. **The** protocol specification ....

CHADDHA, N., WALL, G. A., AND SCHMIDT, B. *An end to end software only scalable video delivery system.* In Proceedings of the Fifth International Workshop on Network and OS Support for Digital Audio and Video (Durham, NH, Apr. 1995), ACM.

Robust Internet Video Transmission Based on Scalable.. - Horn, Stuhlmüller.. (1999) (39 citations) (Correct)

No context found.

N. Chadda, G. Wall, and B. Schmidt. *An end-to-end software-only scalable video delivery system.* In Proc. NOSSDAV'95, Apr. 1995.

Packet Loss Resilient Internet Video Streaming - Girod, Stuhlmüller, Link, Horn (1999) (16 citations) (Correct)

No context found.

N. Chadda, G. Wall, and B. Schmidt, "*An end-to-end software-only scalable video delivery system*," in Proc. NOSSDAV'95, Apr. 1995.